

Production and Perception of Pauses in Speech

Kristina Lundholm Fors

Department of Philosophy, Linguistics and Theory of Science

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UNIVERSITY OF GOTHENBURG

Abstract

Silences can make or break the conversation: if two persons involved in a conversation have different ideas about the typical length of pauses, they will face problems with turn taking. Pauses occur in conversation for a number of reasons, for example for breathing, thinking, word-searching and turn taking management. In this dissertation, we explore the production and perception of pauses in speech. Our aim consists of three main parts: to describe and analyse the production of pauses, to investigate the perception of pauses, and to examine the role of pauses in turn-taking. Our hypothesis is that pauses fill varying functions, and that these functions depend on the context of the pauses. We believe that the duration of pauses may be linked to the pause type, and that we adapt the our pause lengths to the persons we are speaking to. Further, we suggest that pauses occur regularly throughout dialogues. We also hypothesise that the duration of pauses in speech affect the processing of speech.

Pauses are tied to the process of turn taking, and as we learn more about the nature of pauses we may also be able to further develop our understanding of the process of turn holding and turn yielding. We will also be able to use the information about pause production and perception when modelling turn taking in dialogue systems.

Our results show that pause lengths vary greatly across speakers, pause types and dialogues. Pauses tend to be entrained by speakers involved in dialogues, and pauses occur regularly throughout conversations. We also found evidence that pauses have a positive impact on memorising spoken utterances. While speakers adapt their pause lengths to the other speaker in the conversation, they are inclined to keep a consistent ratio between pause types, and this is not dependent on the conversational partner. While it is interesting to look at pauses separately, we need to put them into context to really understand their functions. To highlight the role of pauses in conversation, we proposed an updated turn taking model, where the results from our studies are integrated.

Keywords: pauses, silences, turn taking, dialogue, entrainment